



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,734	02/03/2004	Sheng Dai	1297	9998

24298 7590 11/28/2007
UT-Battelle, LLC
Office of Intellectual Property
One Bethal Valley Road
4500N, MS-6258
Oak Ridge, TN 37831

EXAMINER

HENDRICKSON, STUART L

ART UNIT	PAPER NUMBER
----------	--------------

1793

MAIL DATE	DELIVERY MODE
-----------	---------------

11/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/770,734

Applicant(s)

DAI ET AL.

Examiner

Stuart Hendrickson

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 30-52 is/are rejected.
- 7) ☒ Claim(s) 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Art Unit: 1793

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lagasse et al. 5902562.

The reference teaches, especially in figs 1 and 3, what appears to be the claimed carbon. No differences are seen.

Claims 1-10 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Taguchi article.

The reference teaches a porous carbon monolith containing mesopores and macropores. No difference is seen from the description on pg. 1209-1210 fig. 3.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Polarz article.

The reference teaches on pg. 2944 especially carbon materials having mesopores and macropores. No difference is seen in the carbon product.

Art Unit: 1793

Claims 1-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Peng et al 6024899.

The reference teaches, especially in the examples and col. 6, mesoporous carbon made using porogens. While macropores are not described, it appears that they account for the remaining pore volume. Note also the teaching of optimization of porosity.

Claims 39-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peng.

Peng teaches, especially in col. 2-5, using porogens to make carbon. Peng does not teach using a mix of particle sizes to create the pore structure, doing so is an obvious expedient to create the desired porosity (a large particle of decomposable material creates a wide hole in the carbonized material, as the gasified porogen expands).

Claims 1-10 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oh et al. 6515845.

The reference teaches a very similar process and makes what appears to be the claimed carbon. Note the figures especially.

Claims 11, 25-28, 30-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh.

The reference teaches, especially in col. 3-5, adding silica particles. col. 3 teaches optimization of the pore size. Thus, adding 'meso and micro' particles is an obvious expedient to create the desired pore sizes.

Concerning claim 11, the reference teaches adding conductive materials. Adding graphite is thus an obvious expedient.

Claims 12-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references above, individually, and taken with Taguchi article.

Art Unit: 1793

The above references do not teach a chromatography column for mesoporous carbons. However Taguchi does on pg. 1210 middle. Using the carbon of the above references in a column is an obvious expedient to exploit its sorption properties. Claim 24 is rejected by the combination with Oh.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-11, 36-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) Given that mesopores are defined as 20-500 A, claim 8 is self-contradictory and/or fails to limit the claims. Claim 9 expands the range, which is improper, and further contradicts the normal definition of a mesopore. See also claim 36 and 37.

B) Claim 11 is unclear if a second material is required- which would contradict the 'monolith' limitation, or whether graphitic regions are meant.

C) In claim 39, 'mesoparticles' and 'microparticles' are unclear; the term 'meso' refers to pores, not particles.

The examiner notes that there is a large body of art teaching forming pores in carbon by volatile porogens. Additional references are not used in order to avoid duplication of rejection.

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (571) 272-1351.



Stuart Hendrickson
examiner Art Unit 1754